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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/786,128

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Sukhdeep S. Hundal

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11/26/2008

PAUL, HASTINGS, JANOFSKY & WALKER LLP
875 15th Street, NW
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EXAMINER

NGUYEN, TUAN HOANG

ART UNIT

PAPER NUMBER

2618

MAIL DATE

DELIVERY MODE

11/26/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/786,128	Applicant(s) HUNDAL, SUKHDEEP S.	
	Examiner TUAN H. NGUYEN	Art Unit 2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 August 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-24 is/are pending in the application.
- 4a) Of the above claim(s) 1 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8 and 10-12 is/are allowed.
- 6) ☒ Claim(s) 2-7, 9, and 13-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed on 09/18/2006 with respect to claims 2-7, 9, and 13-24 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 2, 5-7, 9, and 13-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kloper et al. (US PAT. 6,941,110 hereinafter, "Kloper") in view of Diener (U.S. PUB. 2004/0047324).

Consider claim 2, Kloper teaches a method for avoiding interference in a radio communications band during operation of a first RF device employing a first frequency hopping spread spectrum protocol, in conjunction with the operation of at least one other RF device employing a different communications protocol (col. 1 lines 56-66), comprising: identifying an interference from the at least one other RF device in the radio communication band (col. 1 line 56 through col. 2 line 17); and adjusting the first RF device to avoid overlap with the at least one other device, wherein hopping frequencies

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employed by the first RF device cluster in one or more frequency ranges within the radio communications band (col. 2 lines 7-17, and col. 5 lines 39-59).

Kloper does not explicitly show that during clustering, a second frequency range within the radio communications band is not occupied by any channel used by the first RF device, the second frequency range being continuous and having a width corresponding to a plurality of channels capable of transmitting communications of the first RF device.

In the same field of endeavor, Diener teaches during clustering, a second frequency range within the radio communications band is not occupied by any channel used by the first RF device, the second frequency range being continuous and having a width corresponding to a plurality of channels capable of transmitting communications of the first RF device (pages 8-9 [0101]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use, during clustering, a second frequency range within the radio communications band is not occupied by any channel used by the first RF device, the second frequency range being continuous and having a width corresponding to a plurality of channels capable of transmitting communications of the first RF device, as taught by Diener, in order to provide for managing activity in a radio frequency band that is shared, both in frequency and time, by signals of multiple disparate types and devices of various technologies.

Consider claims 5 and 9, Kloper teaches the at least one other RF device includes a second device, wherein the second device operates according to the IEEE

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802.11 protocol (col. 4 lines 17-21).

Consider claim 6, Klover teaches the at least one other RF device includes a third device, wherein the third device employs a second frequency hopping spread spectrum protocol (col. 5 lines 18-38).

Consider claim 7, Klover teaches the first device and the third device operate in the same time domain, wherein the adjusting the frequency of operation comprises intelligent frequency hopping employed by the first device (col. 5 lines 39-52).

Consider claim 13, Klover teaches a system comprising: a first RF module, wherein the first module employs a first frequency hopping spread spectrum protocol (col. 1 lines 56-66); at least one additional RF module (col. 1 lines 56-66); a first protocol stack and transcoder coupled to the first module (col. 1 lines 56-66); and a system microcontroller in communication with the first module and the at least one additional module, wherein the microcontroller receives and sends instructions through the first module protocol stack and transcoder to adjust the operation frequencies employed by the first module to avoid interference identified from the at least one other RF module, wherein hopping frequencies employed by the first RF module cluster in one or more frequency ranges within a radio communications band (col. 2 lines 7-17 and col. 5 lines 39-59).

Kloper does not explicitly show that during clustering, a second frequency range within the radio communications band is not occupied by any channel used by the first RF module, the second frequency range being continuous and having a width corresponding to a plurality of channels capable of transmitting communications of the first RF module.

In the same field of endeavor, Diener teaches during clustering, a second frequency range within the radio communications band is not occupied by any channel used by the first RF module, the second frequency range being continuous and having a width corresponding to a plurality of channels capable of transmitting communications of the first RF module (pages 8-9 [0101]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use, during clustering, a second frequency range within the radio communications band is not occupied by any channel used by the first RF module, the second frequency range being continuous and having a width corresponding to a plurality of channels capable of transmitting communications of the first RF module, as taught by Diener, in order to provide for managing activity in a radio frequency band that is shared, both in frequency and time, by signals of multiple disparate types and devices of various technologies.

Consider claim 14, Kloper further teaches the at least one additional RF module comprises a second module, and wherein the second module employs a second

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frequency hopping spread spectrum protocol (col. 1 lines 56-66).

Consider claims 15 and 18, Kloper further teaches the wherein the microcontroller receives and sends instructions through the second module protocol stack and transcoder to adjust the operation frequencies employed by the second module to avoid interference with the first RF module (col. 2 lines 7-17, col. 3 lines 52-60, and col. 5 lines 39-59).

Consider claims 16 and 17, Kloper further teaches the at least one additional RF module further comprises a third module employing an 802.11 protocol, wherein the microcontroller receives and sends instructions through the first module protocol stack and transcoder to adjust the operation frequencies employed by the first module to avoid interference with the frequency band associated with the third RF module (col. 16 lines 14-27).

Consider claim 19, Kloper further teaches the microcontroller receives and sends instructions through the first module protocol stack and transcoder to adjust the operation frequencies employed by the first module, wherein the first module selects hop frequencies from a one or more frequency ranges that does not substantially overlap the band employed by the third RF module (col. 2 lines 7-17 and col. 5 lines 39-59).

Consider claim 20, Kloper further teaches the microcontroller receives and sends instructions through the second module protocol stack and transcoder to adjust the operation frequencies employed by the second module, wherein the second module selects hop frequencies from a second frequency range that does not substantially overlap the one or more frequency ranges or the frequency band employed by the third RF module (col. 2 lines 7-17 and col. 5 lines 39-59).

4. Claims 3-4 and 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kloper in view of Diener and further in view of Gan et al. (U.S. PUB. 2006/0176850 hereinafter "Gan").

Consider claim 3, Kloper and Diener, in combination fail to teach the identifying the interference comprises determining a bit error rate or frame error rate.

However, Gan teaches the identifying the interference comprises determining a bit error rate or frame error rate (page 4 [0058]).

Therefore, it is obvious to one of ordinary skill in the art at the time the invention was made to incorporate the disclosing of Gan into view of Kloper and Diener, in order to provide a communications device is used in a network that communicates via a frequency hopping protocol.

Consider claim 4, Gan further teaches the at least one other RF device includes a fixed frequency duplex device (page 3 [0023]).

Consider claim 21, Klover teaches an RF communications device comprising: a first RF transceiver employing a frequency hopping spread spectrum protocol, wherein the transceiver includes capability of detection of an interferer employing a different RF communications protocol (col. 1 lines 56-66); a first frequency hopping spread spectrum protocol stack and transcoder coupled to the first RF transceiver (col. 1 lines 56-66); and a microcontroller in communication with the protocol stack, wherein the microcontroller facilitates segregation one or more frequency ranges of a radio communications band of a set of channels employed by the first transceiver (col. 2 lines 7-17, col. 3 lines 52-60, and col. 5 lines 39-59).

Klover does not explicitly show that during clustering, a second frequency range within the radio communications band is not occupied by any channel used by the first RF transceiver, the second frequency range being continuous and having a width corresponding to a plurality of channels capable of transmitting communications of the first RF transceiver.

In the same field of endeavor, Diener teaches during clustering, a second frequency range within the radio communications band is not occupied by any channel used by the first RF transceiver, the second frequency range being continuous and having a width corresponding to a plurality of channels capable of transmitting communications of the first RF transceiver (pages 8-9 [0101]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use, during clustering, a second frequency range within the radio communications band is not occupied by any channel used by the first RF

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transceiver, the second frequency range being continuous and having a width corresponding to a plurality of channels capable of transmitting communications of the first RF transceiver, as taught by Diener, in order to provide for managing activity in a radio frequency band that is shared, both in frequency and time, by signals of multiple disparate types and devices of various technologies.

Kloper and Diener, in combination fail to teach the detection of an interferer comprises: selecting a plurality of test channels in accordance with a channel structure of the interferer; selecting a frequency that is potentially occupied by an interferer that is the source of the interference in each selected channel; measuring a received signal strength associated with each selected channel; and identifying the interferer in accordance with the measured received signal strength indicators.

However, Gan teaches the detection of an interferer comprises: selecting a plurality of test channels in accordance with a channel structure of the interferer (page 4 [0057] and [0066]); selecting a frequency that is potentially occupied by an interferer that is the source of the interference in each selected channel (page 4 [0059]); measuring a received signal strength associated with each selected channel (pages 4-5 [0067]); and identifying the interferer in accordance with the measured received signal strength indicators (pages 4-5 [0067]).

Therefore, it is obvious to one of ordinary skill in the art at the time the invention was made to incorporate the disclosing of Gan into view of Kloper and Diener, in order to provide a communications device is used in a network that communicates via a frequency hopping protocol.

Consider claim 22, Kloper further teaches a second RF transceiver in communications with the microcontroller, wherein the second RF transceiver employs a communications protocol different from the first transceiver (col. 1 lines 56-66).

Consider claims 23 and 24, Gan further teaches the identifying an interference comprises: selecting a plurality of test channels in accordance with a channel structure of the interferer (page 4 [0057] and [0066]); selecting a frequency that is potentially occupied by an interferer that is the source of the interference in each selected channel (page 4 [0059]); measuring a received signal strength associated with each selected channel (pages 4-5 [0067]); and identifying the interferer in accordance with the measured received signal strength indicators (pages 4-5 [0067]).

Reasons for Allowance

5. Claims 8 and 10-12 are allowed over the prior art record.
6. The following is an examiner's statement of reasons for allowance:

The applicant's remarks, filed on 08/19/2008, have been carefully reviewed with updated search. Consequently, reasons for allowance of claims 8 and 10-12 are set forth in according to the applicant's remarks state on pages 14-18.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any response to this action should be mailed to:

Mail Stop_____ (Explanation, e.g., Amendment or After-final, etc.)

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Facsimile responses should be faxed to:

(571) 273-8300

Hand-delivered responses should be brought to:

Customer Service Window

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401 Dulany Street

Alexandria, VA 22313

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan H. Nguyen whose telephone number is (571)272-8329. The examiner can normally be reached on 8:00Am - 5:00Pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Maung Nay A. can be reached on (571)272-7882882. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information Consider the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Tuan Nguyen/
Examiner
Art Unit 2618

/Nay A. Maung/
Supervisory Patent Examiner, Art
Unit 2618